

The present invention relates to a semiconductor component, in particular a field-effect-controllable transistor.

DE 198 28 191 C1 discloses a lateral high-voltage transistor having, on an n-conducting substrate, an epitaxial layer in which source and drain zones and also a channel zone surrounding the source zone are formed. Trenches are provided in the epitaxial layer. The sidewalls of these trenches are heavily doped with a complementary dopant with respect to the rest of the epitaxial layer. A conductive channel in the channel zone can be controlled by means of a gate electrode insulated from the channel zone.

a/ When a source-drain voltage is applied, a space charge zone propagates in this transistor - if no gate-source voltage is applied - proceeding from the source zone, and as the voltage rises, the space charge zone gradually reaches the complementarily doped sidewalls of the trenches in the direction of the drain zone. Where the space charge zone propagates, free charge carriers of the doped sidewalls of the trenches and free charge carriers of the surrounding epitaxial layer mutually compensate one another. In these regions in which the free charge carriers mutually compensate one another, a high breakdown voltage results for lack of free charge carriers. The reverse voltage of the transistor can be

set by means of ~~the~~ doping of the trenches, ~~the~~ epitaxial layer preferably being highly doped, as a result of which the transistor has a low on resistance when the gate is driven.

a) Such transistors having a low on resistance but a high reverse voltage are currently available only as discrete components, that is to say only the transistor is realized in a semiconductor body. However, for many applications, for example for switching loads, it is desirable to integrate a transistor as a switching element and its associated drive circuit, for example using CMOS technology, in a single semiconductor body.

Summary of the Invention: --

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On page 5, line 27 through page 6, line 28, replace the paragraphs with:

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-- Brief Description of the Drawings:

92 Fig. 1 is a cross sectional view of a first exemplary embodiment of a semiconductor component;

Fig. 2 is a plan view of an embodiment of a semiconductor component with elongate first terminal zones;

Fig. 3 is a plan view of an embodiment of a semiconductor component with an annularly closed first terminal zone;

Fig. 4 is a cross sectional view of another exemplary embodiment of a semiconductor component;

Fig. 5 is a cross sectional view of another exemplary embodiment of a semiconductor component with a plurality of first terminal zones and compensation zones running in a pillar-shaped manner;

9<sup>2</sup> Fig. 6 is a cross sectional view of another exemplary embodiment of a semiconductor component with a plurality of first terminal zones and compensation zones of spherical design;

Fig. 7 is a cross sectional view of another exemplary embodiment of a semiconductor component with a plurality of first terminal zones and with first compensation zones adjacent second compensation zones; and

Fig. 8 is a cross sectional view of another exemplary embodiment of a semiconductor component with a plurality of first terminal zones and with a second terminal zone surrounding the first terminal zones in a well-like manner.

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Description of the Preferred Embodiments: --

On page 8, lines 23-30, replace the paragraph with:

*See B1*  
*Q3*  
--P-doped compensation zones 30 are formed in the n-doped layer 24, and in the exemplary embodiment shown in figure 1, the compensation zones extend in a pillar-shaped manner in the vertical direction of the semiconductor body 20. The cross section of these pillars 30 is circular in the exemplary embodiments shown in figures 2 and 3, but this cross section can assume virtually any other geometric shape and can be, for example, rectangular, square or octagonal. --

On page 18, delete all of the material on that page.

On page 19, line 1, change "Patent Claims" to:

--I claim: --

After page 21, add the following page:

-- ABSTRACT OF THE DISCLOSURE:

*Q4*  
A semiconductor component includes a semiconductor body having a substrate of a first conduction type and a first layer of a second conduction type that is located above the substrate. A channel zone of the first conduction type is formed in the